

In the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

1 (currently amended). An apparatus for detecting an analyte, comprising:
a sensor comprising a medium and, disposed therein, a hologram, wherein an optical characteristic of the hologram changes as a result of a variation of a physical property of the medium resulting from interaction with the analyte, and wherein the hologram is formed as a non-planar mirror; and

a unit of optical fibers for transmitting light to and from the hologram;
wherein the non-planar mirror is concave, convex, capable of effecting retroreflection,
recorded using one or more reflective beads, or a prism.

2 (previously presented). The apparatus according to claim 1, wherein the hologram is formed as a concave mirror.

3 (previously presented). The apparatus according to claim 1, wherein the hologram is formed as a convex mirror.

4 (previously presented). The apparatus according to claim 1, wherein the hologram is formed as a corner cube prism.

5 (currently amended). A method for the production of an apparatus comprising a unit of optical fibers and a sensor comprising a medium and, disposed therein, a hologram, wherein an optical characteristic of the hologram changes as a result of a variation of a physical property of the medium resulting from interaction with the analyte, and wherein the hologram is formed as a non-planar mirror; wherein said method comprises forming, in a medium, a hologram as a non-planar mirror; wherein the non-planar mirror is concave, convex, capable of effecting retroreflection,
recorded using one or more reflective beads, or a prism.

6 (previously presented). The method according to claim 5, wherein the hologram is recorded in a non-planar medium.

7 (previously presented). The method according to claim 6, wherein the hologram is recorded using a planar mirror.

8 (previously presented). The method according to claim 5, wherein the hologram is recorded using a non-planar mirror.

9 (previously presented). The method according to claim 8, wherein the hologram is recorded using a concave mirror.

10 (previously presented). The method according to claim 8, wherein the hologram is recorded using a mirror capable of effecting retroreflection.

11 (previously presented). The method according to claim 10, wherein the hologram is recorded using a corner cube prism.

12 (previously presented). The method according to claim 8, wherein the hologram is recorded using one or more reflective beads.

13 (previously presented). The method according to claim 5, wherein the hologram is recorded using a lens, aperture, slit or obstacle, or a combination thereof, placed between the light source and the medium.

14 (currently amended). A method for the detection of an analyte, which comprises remotely interrogating, with light, the holographic element of a sensor comprising a medium and, disposed therein, a hologram, wherein an optical characteristic of the hologram changes as a result of a

variation of a physical property of the medium resulting from interaction with the analyte, and wherein the hologram is formed as a non-planar mirror; wherein the non-planar mirror is concave, convex, capable of effecting retroreflection, recorded using one or more reflective beads, or a prism; wherein the interrogating is via a unit of optical fibers that transmits the light to and from the hologram; and wherein said method further comprises detecting any change in an optical characteristic of the sensor.

15 (previously presented). The method according to claim 14, wherein the light is collimated.

16 (previously presented). The method according to claim 14, wherein a recording surface of the non-planar mirror is formed as a non-planar surface.

17 (previously presented). The method according to claim 15, wherein a recording surface of the non-planar mirror is formed as a non-planar surface.

18 (previously presented). The method according to claim 5, wherein a recording surface of the non-planar mirror is formed as a non-planar surface.

19 (previously presented). The apparatus according to claim 1, wherein a recording surface of the non-planar mirror is formed as a non-planar surface.